

**WHAT IS CLAIMED IS:**

1. A method of packet assembly in a wireless transmission system, comprising the steps of:
  - sampling at least first and second packets of a plurality of packets;
  - calculating respective throughput times for each of said first and second packets; and
  - consolidating said first and second packets into a third packet if the sum of said corresponding throughput times exceeds a predetermined limit.
2. The method of Claim 1, wherein said plurality of packets in the sampling step conform to an IEEE 802.11 standard.
3. The method of Claim 1, wherein said predetermined limit is a throughput time of said third packet in the consolidating step.
4. The method of Claim 1, wherein said throughput time of said third packet is less than said combined throughput times of said first and second packets.
5. The method of Claim 1, wherein said throughput time includes an assembly time and a disassembly time of said packet.
6. The method of Claim 1, wherein said throughput time includes a data packet time, a SIFS time, a DIFS time, and an average back-off time of said corresponding packet.
7. The method of Claim 1, wherein the step of consolidating is performed in an ad hoc network topology.

8. The method of Claim 1, wherein the step of consolidating is performed in an infrastructure network topology.

9. The method of Claim 1, wherein more than two packets are sampled in the step of sampling and consolidated into a consolidated packet in the step of consolidating when the sum of said corresponding throughput times exceeds said predetermined limit.

10. A packet assembly apparatus in a wireless transmission system, comprising:  
a sampler for sampling at least first and second packets of a plurality of  
packets; and  
5 a processor for calculating respective throughput times for each of said first and  
second packets;

wherein a third packet is generated by consolidating said first and second  
packets if the sum of said corresponding throughput times exceeds a predetermined limit.

11. The apparatus of Claim 10, wherein said plurality of packets conform to an  
IEEE 802.11 standard.

12. The apparatus of Claim 10, wherein said predetermined limit is a throughput  
time of said third packet.

13. The apparatus of Claim 10, wherein said throughput time of said third packet is  
less than said combined throughput times of said first and second packets.

14. The apparatus of Claim 10, wherein said throughput time includes an assembly  
time and a disassembly time of said packet.

15. The apparatus of Claim 10, wherein said throughput time includes a data packet time, a SIFS time, a DIFS time, and an average back-off time of said corresponding packet.

16. The apparatus of Claim 10, wherein consolidation of said first and second packets is performed in an ad hoc network topology.

17. The apparatus of Claim 10, wherein consolidation of said first and second packets is performed in an infrastructure network topology.

18. The apparatus of Claim 10, wherein more than two packets are sampled by said sampler and consolidated into a consolidated packet when the sum of said corresponding throughput times exceeds said predetermined limit.